

AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) In a computerized system that includes a client system, a front-end server, and one or more back-end servers, all interconnected with a communication link, ~~wherein the client system periodically accesses content stored on the one or more back-end servers through the front end server, and wherein over time the content may be moved from one back end server to another or may appear to be stored at a back end server when in fact the content is not stored at that back end server~~, a method of transparently redirecting a request for the content such that the client system is unaware of the redirection, the method comprising the front-end server performing the acts of:

receiving a request for the content from the client system, the front-end server making it appear as if the front-end server is the source of the content, which actually is stored at a back-end server;

~~adding a front end indicator to the request in order to indicate that the front end server is making the request on behalf of the client system;~~

directing the request to a particular back-end server;

receiving from the particular back-end server, a redirect response identifying one or more other back-end servers where the content is stored;

automatically and without client system intervention, redirecting the request to a redirect back-end server, the redirect back-end server being one of the one or more other back-end servers identified in the redirect response;

receiving the requested content from the redirect back-end server; and

sending the requested content to the client system from the front-end server so that any local caching of the content received from the front-end server remains valid at the client system regardless of which of the one or more back-end servers actually stores the content.

2. (Canceled).

3. (Currently Amended) A method as recited in claim 1 further comprising the act of adding a front-end indicator to the request in order to indicate that the front-end server is making the request on behalf of the client system, wherein the front-end indicator is added to a hypertext transfer protocol User Agent header.

4. (Previously Presented) A method as recited in claim 1 wherein the redirect response identifies a list of back-end servers where the content is stored.

5. (Original) A method as recited in claim 4 wherein the list of back-end servers is identified in a hypertext transfer protocol 305 Use Proxy response from the particular back-end server.

6. (Original) A method as recited in claim 4 further comprising the acts of:
requesting authentication credentials from the client system; and
receiving proper authentication credentials from the client system.

7. (Original) A method as recited in claim 6 further comprising the acts of:
receiving an authentication token that is associated with the authentication credentials; and
using the authentication token as a key for a hash operation to identify the redirect back-end server from the list of back-end servers identified in the redirect response.

8. (Original) A method as recited in claim 1 wherein the redirect response identifies a single back-end server where the content is stored.

9. (Original) A method as recited in claim 8 wherein the single back-end server is identified in either a hypertext transfer protocol 301 Moved Permanently or 302 Moved Temporarily response from the particular server.

10. (Original) A method as recited in claim 1, further comprising the acts of:
receiving the requested content from the redirect back-end server; and
sending the requested content to the client system.

11. (Currently Amended) In a computerized system that includes a client system, a front-end server, and one or more back-end servers, all interconnected with a communication link, ~~wherein the client system periodically accesses content stored on one or more back-end servers through the front end server, and wherein over time the content may be moved from one back-end server to another or may appear to be stored at a back end server when in fact the content is not stored at that back end server,~~ a method of redirecting a request for the content directed to a particular back-end server when the content is not stored at the particular back-end server, the method comprising the back-end server performing the acts of:

receiving a content request from the client system through the front-end server, the content request including a front-end indicator in order to indicate that the front-end server is making the content request on behalf of the client system;

examining the content request for the front-end indicator;

if the front-end indicator having been is present in the content request, creating a redirect response to the content request that includes a list of one or more identifying a plurality of redirect back-end servers where the content is stored so that the front-end server can load balance among the plurality of redirect back-end servers capable of satisfying the content request, and otherwise creating a redirect response to the content request that includes a single redirect back-end server where the content is stored; and

sending the redirect response to the front-end server so that the front-end server can redirect the request to ~~the~~ one or more redirect back-end servers.

12. (Original) A method as recited in claim 11 wherein the front-end indicator is added to a hypertext transfer protocol User Agent header.

13. (Original) A method as recited in claim 11 wherein the list of one or more redirect back-end servers is identified in a hypertext transfer protocol 305 Use Proxy response from the particular back-end server.

14. (Currently Amended) In a computerized system that includes a client system, a front-end server, and one or more back-end servers, all interconnected with a communication link, ~~wherein the client system periodically accesses content stored on the one or more back-end servers through the front end server, and wherein over time the content may be moved from one back end server to another or may appear to be stored at a back end server when in fact the content is not stored at that back end server,~~ a method of transparently redirecting a request for the content such that the client system is unaware of the redirection, the method comprising the front-end server performing:

an act of receiving a request for the content from the client system as if the front-end server were the source of content stored at the one or more back-end servers;

an act of adding a front end indicator to the request in order to indicate that the front end server is making the request on behalf of the client system;

a step for querying a particular back-end server for the requested content, wherein the response to the query identifies one or more other back-end servers where the content is stored, the one or more other back-end servers being either inaccessible or unknown to the client system;

a step for, automatically and without user intervention, retrieving the requested content from a redirect back-end server, the redirect back-end server being one of the one or more other back-end servers identified in the redirect query response; and

an act of sending the requested content to the client system from the front-end server so that any local caching of the requested content received from the front-end server remains valid at the client system even if the requested content later moves from the redirect back-end server or is retrieved from a back-end server other than the redirect back-end server.

15. (Original) A method as recited in claim 14 further comprising a step for authenticating the client system.

16. (Original) A method as recited in claim 15 wherein the query response identifies a list of back-end servers where the content is stored, the method further comprising a step for distributing the request to the redirect back-end server based on the client system authentication.

17. (Original) A method as recited in claim 14 wherein the query response identifies a single back-end servers where the content is stored.

18-24. (Canceled).

25. (Currently Amended) In a computerized system that includes a client system, a front-end server, and one or more back-end servers, all interconnected with a communication link, ~~wherein the client system periodically accesses content stored on the one or more back-end servers through the front end server, and wherein over time the content may be moved from one back end server to another or may appear to be stored at a back end server when in fact the content is not stored at that back end server~~, a computer program product for implementing a method of transparently redirecting a request for ~~the~~ content such that the client system is unaware of the redirection, comprising:

a computer readable medium for carrying machine-executable instructions for implementing the method; and

wherein said method is comprised of machine-executable instructions for the front-end server performing the acts of:

receiving a request for the content from the client system, the front-end server making it appear as if the front-end server is the source of the content, which actually is stored at a back-end server;

~~adding a front end indicator to the request in order to indicate that the front end server is making the request on behalf of the client system;~~

directing the request to a particular back-end server;

receiving from the particular back-end server, a redirect response identifying one or more other back-end servers where the content is stored;

automatically and without client system intervention, redirecting the request to a redirect back-end server, the redirect back-end server being one of the one or more other back-end servers identified in the redirect response;

receiving the requested content from the redirect back-end server; and

sending the requested content to the client system from the front-end server so that any local caching of the content received from the front-end server remains valid at the client system regardless of which of the one or more back-end servers actually stores the content.

26. (Canceled).

27. (Original) A computer program product as recited in claim 25, wherein the redirect response identifies a list of back-end servers where the content is stored.

28. (Original) A computer program product as recited in claim 27, the method comprised further of machine-executable instructions for performing the acts of:

requesting authentication credentials from the client system; and
receiving proper authentication credentials from the client system.

29. (Original) A computer program product as recited in claim 28, the method comprised further of machine-executable instructions for performing the acts of:

receiving an authentication token that is associated with the authentication credentials; and
using the authentication token as a key for a hash operation to identify the redirect back-end server from the list of back-end servers identified in the redirect response.

30. (Original) A computer program product as recited in claim 25, wherein the redirect response identifies a single back-end server where the content is stored.

31. (Currently Amended) In a computerized system that includes a client system, a front-end server, and one or more back-end servers, all interconnected with a communication link, ~~wherein the client system periodically accesses content stored on one or more back end servers through the front end server, and wherein over time the content may be moved from one back end server to another or may appear to be stored at a back end server when in fact the content is not stored at that back end server,~~ a computer program product for implementing a method of redirecting a request for the content directed to a particular back-end server when the content is not stored at the particular back-end server, comprising:

 a computer readable medium for carrying machine-executable instructions for implementing the method; and

 wherein said method is comprised of machine-executable instructions for the particular back-end server performing the acts of:

 receiving a request for the content from the client system through the front-end server, the request including a front-end indicator in order to indicate that the front-end server is making the request on behalf of the client system;

 examining the content request for the front-end indicator;

if the front-end indicator having been is present in the content request, creating a redirect response to the request that includes a list of one or more identifying a plurality of redirect back-end servers where the content is stored so that the front-end server can load balance among the plurality of redirect back-end servers capable of satisfying the content request, and otherwise creating a redirect response to the content request that includes a single redirect back-end server where the content is stored; and

 sending the redirect response to the front-end server so that the front-end server can redirect the request to the one or more redirect back-end servers.

32. (Original) A method as recited in claim 31 wherein the front-end indicator is added to a hypertext transfer protocol User Agent header.

33. (Original) A method as recited in claim 31 wherein the list of one or more redirect back-end servers is identified in a hypertext transfer protocol 305 Use Proxy response from the particular back-end server.

34. (New) A computer program product as recited in claim 25, the method comprised further of machine-executable instructions for performing the act of adding a front-end indicator to the request in order to indicate that the front-end server is making the request on behalf of the client system.